CLAIMS

1. A method of washing drain pipe in which a nozzle is provided at leading end of a high pressure hose, a universal guide is linked to leading end of the nozzle, high pressure water is jetted obliquely rearward from a plurality of injection holes opened in the nozzle, a propulsion force is generated in the nozzle by that jetting force, the high pressure hose is fed into a drain pipe while causing the high pressure hose to turn, and interior of the pipe is washed by the high pressure water jetted from the nozzle, characterized in that:

the nozzle is made to turn in a spiral manner in conjunction with turning and pulling out of the high pressure hose, so that, of the plurality of injection holes, only a certain injection hole is always in opposition to the inner peripheral surface of the pipe.

2. A method of washing drain pipe in which a nozzle is provided at leading end of a high pressure hose, a universal guide is linked to leading end of the nozzle, high pressure water is jetted obliquely rearward from a plurality of injection holes opened in the nozzle, a propulsion force is generated in the nozzle by that jetting force, the high pressure hose is fed into a drain pipe while causing the high pressure hose to turn, and interior of the pipe is washed by the high pressure water jetted from the nozzle, characterized in that:

the nozzle is made to turn in a spiral manner in conjunction with turning and pulling out of the high pressure hose, so that, of the plurality of injection holes, only a certain injection hole is always in opposition to the inner peripheral surface of the pipe;

diameter of the certain injection hole is set so as to be larger than diameters of other injection holes; and

angle α subtended by center axis line I of the certain injection hole and center axis line H of the nozzle is set so as to be smaller than angle β subtended by center axis line J of other injection holes and the center axis line H of the nozzle (so that $\alpha < \beta$).

3. A method of washing drain pipe in which a nozzle is provided at leading end of a high pressure hose, a universal guide is linked to leading end of the nozzle, high pressure water is jetted from a plurality of injection holes opened in the nozzle, the high pressure hose is fed into a drain pipe while causing the high pressure hose to turn, and interior of the pipe is washed by the high pressure water jetted from the nozzle, characterized in that:

the nozzle is made to turn in a spiral manner in conjunction with turning, pulling out, and pulling back of the high pressure hose, so that, of the plurality of injection holes, only a certain injection hole is always in opposition to the inner peripheral surface of the pipe;

diameter of the certain injection hole is set so as to be larger than diameters of other injection holes; and

angle α subtended by center axis line I of the certain injection hole and center axis line H of the nozzle, and angle β subtended by center axis line J of other injection holes and the center axis line H of the nozzle, respectively, are set to 90 degrees.

4. A method of washing drain pipe in which a nozzle is provided at leading end of a high pressure hose, a universal guide is linked to leading end of the nozzle, high pressure water is jetted from a plurality of injection holes opened in the nozzle, the high pressure hose is fed into a drain pipe while

causing the high pressure hose to turn, and interior of the pipe is washed by the high pressure water jetted from the nozzle, characterized in that:

the nozzle is made to turn in a spiral manner along inner peripheral surface of the pipe, in conjunction with turning and feeding out the high pressure hose, so that, of the plurality of injection holes, only a certain injection hole is always in opposition to the inner peripheral surface of the pipe;

diameter of the certain injection hole is made larger than diameters of other injection holes;

position of the certain injection hole is made farther rearward than positions of other injection holes as seen from direction of advance of the nozzle;

angle α subtended by center axis line I of the certain injection hole and center axis line H of the nozzle is made an acute angle; and

angles β subtended by center axis line J of other injection holes and the center axis line H of the nozzle, respectively, are set at substantially 90 degrees.

5. A method of washing drain pipe in which a nozzle is provided at leading end of a high pressure hose, a universal guide is linked to leading end of the nozzle, a jetting medium is jetted obliquely rearward from a plurality of injection holes opened in the nozzle, a propulsion force is generated in the nozzle by that jetting force, the high pressure hose is fed into a drain pipe while causing the high pressure hose to turn, and interior of the pipe is washed by the jetting medium jetted from the nozzle, characterized in that:

the jetting medium is constituted by a mixture of a fluid and a gas; and

the nozzle is made to turn in a spiral manner in conjunction with turning and pulling out of the high pressure hose, so that, of the plurality of

injection holes, only a certain injection hole is always in opposition to the inner peripheral surface of the pipe.

6. A method of washing drain pipe in which a nozzle is provided at leading end of a high pressure hose, a universal guide is linked to leading end of the nozzle, jetting medium is jetted obliquely rearward from a plurality of injection holes opened in the nozzle, a propulsion force is generated in the nozzle by that jetting force, the high pressure hose is fed into a drain pipe while causing the high pressure hose to turn, and interior of the pipe is washed by the jetting medium jetted from the nozzle, characterized in that:

the jetting medium is constituted by a mixture of a fluid and a gas;

the nozzle is made to turn in a spiral manner in conjunction with turning and pulling out of the high pressure hose, so that, of the plurality of injection holes, only a certain injection hole is always in opposition to the inner peripheral surface of the pipe;

diameter of the certain injection hole is set so as to be larger than diameters of other injection holes; and

angle α subtended by center axis line I of the certain injection hole and center axis line H of the nozzle is set so as to be smaller than angle β subtended by center axis line J of other injection holes and the center axis line H of the nozzle (so that $\alpha < \beta$).

7. A method of washing drain pipe in which a nozzle is provided at leading end of a high pressure hose, a universal guide is linked to leading end of the nozzle, jetting medium is jetted from a plurality of injection holes opened in the nozzle, the high pressure hose is fed into a drain pipe while causing the high pressure hose to turn, and interior of the pipe is washed by the jetting medium jetted from the nozzle, characterized in that:

the jetting medium is constituted by a mixture of a fluid and a gas;

the nozzle is made to turn in a spiral manner along inner peripheral surface of the pipe, in conjunction with turning, pulling out, and pulling back the high pressure hose, so that, of the plurality of injection holes, only a certain injection hole is always in opposition to the inner peripheral surface of the pipe;

diameter of the certain injection hole is set so as to be larger than diameters of other injection holes; and

angle α subtended by center axis line I of the certain injection hole and center axis line H of the nozzle, and angle β subtended by center axis line J of other injection holes and the center axis line H of the nozzle, respectively, are set to 90 degrees.

8. A method of washing drain pipe in which a nozzle is provided at leading end of a high pressure hose, a universal guide is linked to leading end of the nozzle, jetting medium is jetted from a plurality of injection holes opened in the nozzle, the high pressure hose is fed into a drain pipe while causing the high pressure hose to turn, and interior of the pipe is washed by the jetting medium jetted from the nozzle, in which a nozzle is provided at leading end of a high pressure hose, a universal guide is linked to leading end of the nozzle, jetting medium is jetted obliquely rearward from a plurality of injection holes opened in the nozzle, a propulsion force is generated in the nozzle by that jetting force, the high pressure hose is fed into a drain pipe while causing the high pressure hose to turn, and interior of the pipe is washed by the jetting medium jetted from the nozzle, characterized in that:

the jetting medium is constituted by a mixture of a fluid and a gas;

the nozzle is made to turn in a spiral manner in conjunction with turning and feeding out the high pressure hose, so that, of the plurality of injection holes, only a certain injection hole is always in opposition to the inner peripheral surface of the pipe;

diameter of the certain injection hole is made larger than diameters of other injection holes;

position of the certain injection hole is made farther rearward than positions of other injection holes as seen from direction of advance of the nozzle;

angle α subtended by center axis line I of the certain injection hole and center axis line H of the nozzle is made an acute angle; and

angles β subtended by center axis line J of other injection holes and the center axis line H of the nozzle, respectively, are set at substantially 90 degrees.

9. The method of washing drain pipe according to any one of claims 1 to 4, characterized in that the high pressure water is hot water.

10. The method of washing drain pipe according to any of claims 5 to 8, characterized in that the fluid is cold water or hot water, and the gas is air.

11. The method of washing drain pipe according to claim 1 or 5, characterized in that diameter of the certain injection hole is set so as to be larger than diameters of other injection holes.

12. The method of washing drain pipe according to any of claims 1 to 8, characterized in that the nozzle and the high pressure hose are directly linked by means of a pressure connection socket.

13. The method of washing drain pipe according to any of claims 1 to 8, characterized in that a reference line indicating position of the certain injection hole is formed on surface of the high pressure hose, along longitudinal direction thereof.

14. A device for washing drain pipe in which a nozzle is provided at leading end of a high pressure hose, a universal guide is linked to leading end of the nozzle, high pressure water is jetted obliquely rearward from a plurality of injection holes opened in the nozzle, a propulsion force is generated in the nozzle by that jetting force, the high pressure hose is fed into a drain pipe while causing the high pressure hose to turn, and interior of the pipe is washed by the high pressure water jetted from the nozzle, characterized in that:

only a certain injection hole of the plurality of injection holes is deployed so as to always be in opposition to the inner peripheral surface of pipe by adjusting position where the plurality of injection holes is formed and jetting volume of high pressure water jetted from the injection holes; and

provision is made for causing the nozzle to turn in a spiral manner along the inner peripheral surface of pipe in conjunction with turning and pulling out of the high pressure hose.

15. A device for washing drain pipe in which a nozzle is provided at leading end of a high pressure hose, a universal guide is linked to leading end of the nozzle, high pressure water is jetted obliquely rearward from a plurality

of injection holes opened in the nozzle, a propulsion force is generated in the nozzle by that jetting force, the high pressure hose is fed into a drain pipe while causing the high pressure hose to turn, and interior of the pipe is washed by the high pressure water jetted from the nozzle, characterized in that:

only a certain injection hole of the plurality of injection holes is deployed so as to always be in opposition to the inner peripheral surface of pipe by adjusting position where the plurality of injection holes is formed and jetting volume of high pressure water jetted from the injection holes;

provision is made for causing the nozzle to turn in a spiral manner along the inner peripheral surface of pipe in conjunction with turning and pulling out of the high pressure;

diameter of the certain injection hole is set so as to be larger than diameters of other injection holes; and

angle α subtended by center axis line I of the certain injection hole and center axis line H of the nozzle is set so as to be smaller than angle β subtended by center axis line J of other injection holes and the center axis line H of the nozzle (so that $\alpha < \beta$).

16. A device for washing drain pipe in which a nozzle is provided at leading end of a high pressure hose, a universal guide is linked to leading end of the nozzle, high pressure water is jetted from a plurality of injection holes opened in the nozzle, the high pressure hose is fed into a drain pipe while causing the high pressure hose to turn, and interior of the pipe is washed by the high pressure water jetted from the nozzle, characterized in that:

only a certain injection hole of the plurality of injection holes is deployed so as to always be in opposition to the inner peripheral surface of

pipe by adjusting position where the plurality of injection holes is formed and jetting volume of high pressure water jetted from the injection holes;

provision is made for causing the nozzle to turn in a spiral manner along the inner peripheral surface of pipe in conjunction with turning, pulling out, and pulling back the high pressure hose;

diameter of the certain injection hole is set so as to be larger than diameters of other injection holes; and

angle α subtended by center axis line I of the certain injection hole and center axis line H of the nozzle, and angle β subtended by center axis line J of other injection holes and the center axis line H of the nozzle, respectively, are set to 90 degrees.

17. A device for washing drain pipe in which a nozzle is provided at leading end of a high pressure hose, a universal guide is linked to leading end of the nozzle, high pressure water is jetted from a plurality of injection holes opened in the nozzle, the high pressure hose is fed into a drain pipe while causing the high pressure hose to turn, and interior of the pipe is washed by the high pressure water jetted from the nozzle, characterized in that:

only a certain injection hole of the plurality of injection holes is deployed so as to always be in opposition to the inner peripheral surface of pipe by adjusting position where the plurality of injection holes is formed and jetting volume of high pressure water jetted from the injection holes;

provision is made for causing the nozzle to turn in a spiral manner along the inner peripheral surface of pipe in conjunction with turning and feeding out the high pressure hose;

diameter of the certain injection hole is made larger than diameters of other injection holes;

position of the certain injection hole is made farther rearward than positions of other injection holes as seen from direction of advance of the nozzle;

angle α subtended by center axis line I of the certain injection hole and center axis line H of the nozzle is made an acute angle; and

angles β subtended by center axis line J of other injection holes and the center axis line H of the nozzle, respectively, are set to substantially 90 degrees.

18. A device for washing drain pipe in which a nozzle is provided at leading end of a high pressure hose, a universal guide is linked to leading end of the nozzle, a jetting medium is jetted obliquely rearward from a plurality of injection holes opened in the nozzle, a propulsion force is generated in the nozzle by that jetting force, the high pressure hose is fed into a drain pipe while causing the high pressure hose to turn, and interior of the pipe is washed by the jetting medium jetted from the nozzle, characterized in that:

the jetting medium is constituted by a mixture of a fluid and a gas;

only a certain injection hole of the plurality of injection holes is deployed so as to always be in opposition to the inner peripheral surface of pipe by adjusting position where the plurality of injection holes is formed and jetting volume of jetting medium jetted from the injection holes; and

provision is made for causing the nozzle to turn in a spiral manner along the inner peripheral surface of pipe in conjunction with turning and pulling out of the high pressure hose.

19. A device for washing drain pipe in which a nozzle is provided at leading end of a high pressure hose, a universal guide is linked to leading end of the nozzle, a jetting medium is jetted obliquely rearward from a plurality of

injection holes opened in the nozzle, a propulsion force is generated in the nozzle by that jetting force, the high pressure hose is fed into a drain pipe while causing the high pressure hose to turn, and interior of the pipe is washed by the jetting medium jetted from the nozzle, characterized in that:

the jetting medium is constituted by a mixture of a fluid and a gas;

only a certain injection hole of the plurality of injection holes is deployed so as to always be in opposition to the inner peripheral surface of pipe by adjusting position where the plurality of injection holes is formed and jetting volume of jetting medium jetted from the injection holes;

provision is made for causing the nozzle to turn in a spiral manner along the inner peripheral surface of pipe in conjunction with turning and pulling out of the high pressure hose;

diameter of the certain injection hole is set so as to be larger than diameters of other injection holes; and

angle α subtended by center axis line I of the certain injection hole and center axis line H of the nozzle is set so as to be smaller than angle β subtended by center axis line J of other injection holes and the center axis line H of the nozzle (so that $\alpha < \beta$).

20. device for washing drain pipe in which a nozzle is provided at leading end of a high pressure hose, a universal guide is linked to leading end of the nozzle, a jetting medium is jetted obliquely rearward from a plurality of injection holes opened in the nozzle, a propulsion force is generated in the nozzle by that jetting force, the high pressure hose is fed into a drain pipe while causing the high pressure hose to turn, and interior of the pipe is washed by the jetting medium jetted from the nozzle, characterized in that:

the jetting medium is constituted by a mixture of a fluid and a gas;

only a certain injection hole of the plurality of injection holes is deployed so as to always be in opposition to the inner peripheral surface of pipe by adjusting position where the plurality of injection holes is formed and jetting volume of jetting medium jetted from the injection holes;

provision is made for causing the nozzle to turn in a spiral manner along the inner peripheral surface of pipe in conjunction with turning, pulling out, and pulling back the high pressure hose;

diameter of the certain injection hole is set so as to be larger than diameters of other injection holes; and

angle α subtended by center axis line I of the certain injection hole and center axis line H of the nozzle, and angle β subtended by center axis line J of other injection holes and the center axis line H of the nozzle, respectively, are set to 90 degrees.

21. A device for washing drain pipe in which a nozzle is provided at leading end of a high pressure hose, a universal guide is linked to leading end of the nozzle, a jetting medium is jetted obliquely rearward from a plurality of injection holes opened in the nozzle, a propulsion force is generated in the nozzle by that jetting force, the high pressure hose is fed into a drain pipe while causing the high pressure hose to turn, and interior of the pipe is washed by the jetting medium jetted from the nozzle, characterized in that:

the jetting medium is constituted by a mixture of a fluid and a gas;

only a certain injection hole of the plurality of injection holes is deployed so as to always be in opposition to the inner peripheral surface of pipe by adjusting position where the plurality of injection holes is formed and jetting volume of jetting medium jetted from the injection holes;

provision is made for causing the nozzle to turn in a spiral manner along the inner peripheral surface of pipe in conjunction with turning and feeding out the high pressure hose;

diameter of the certain injection hole is made larger than diameters of other injection holes;

position of the certain injection hole is made farther rearward than positions of other injection holes as seen from direction of advance of the nozzle;

angle α subtended by center axis line I of the certain injection hole and center axis line H of the nozzle is made an acute angle; and

angles β subtended by center axis line J of other injection holes and the center axis line H of the nozzle, respectively, are set to substantially 90 degrees.

22. The device for washing drain pipe according to any of claims 14 to 17, characterized in that the high pressure water is hot water.

23. The device for washing drain pipe according to any of claims 18 to 21, characterized in that the fluid is cold water or hot water, and the gas is air.

24. The device for washing drain pipe according to any of claims 14 to 18, characterized in that diameter of the certain injection hole is set so as to be larger than diameters of other injection holes.

25. The device for washing drain pipe according to any of claims 14 to 21, characterized in that the nozzle and the high pressure hose are directly linked by means of a pressure connection socket.

26. The device for washing drain pipe according to any one of claims 14 to 21, characterized in that a reference line indicating position of the certain injection hole is formed on surface of the high pressure hose, along the longitudinal direction thereof.